REMARKS

With the above amendments, claims 14 and 15 have been canceled, claims 2, 3, 20, and 22-24 have been amended, and claims 2-7, 9, 11-13, and 16-24 are pending, claims 9, 11, and 17-19 have been withdrawn as being drawn to a non-elected invention, and claims 2-7, 12-13, 16, and 20-24 are ready for further action on the merits. No new matter has been incorporated into any of the claims.

Claim Objections

The Examiner has objected to the language in claim 20 wherein an "isoelectric point of 8.5" was recited instead of an "isoelectric point higher than 8.5". Claim 20 has been amended to recite an "isoelectric point higher than 8.5". Withdrawal of the objection is respectfully requested.

Rejections under 35 USC §112, first paragraph

Claims 3, 4, 15, 16, and 20-24 have been rejected under 35 USC §112, first paragraph as not being fully enabled. The Examiner has objected to the language, "in which one more amino acids are substituted, deleted, or inserted, such that the sequence of the substituted, added, deleted, or inserted amino acid is equivalent

in activity to the amino acid sequence of Sequence No. 2". This language has been modified to include the language "without changing enzymological properties of the enzyme". Because the applicants did contemplate minor modifications of the amino acid sequence (to the extent that the polypeptide retains its enzymological function), and it is within the skill level of the skilled artisan to do these minor amino acid modifications, it is believed that the applicants did have possession of the invention, as claimed, at the time of filing. Accordingly, withdrawal of the rejection is respectfully requested.

Claims 3, 4, 15, 16, and 20-24 have also been rejected under 35 USC §112, first paragraph as lacking description. The Examiner has again objected to the language, "in which one more amino acids are substituted, deleted, or inserted, such that the sequence of the substituted, added, deleted, or inserted amino acid is equivalent in activity to the amino acid sequence of Sequence No. 2". This language has been deleted. Accordingly, it is believed that this rejection is now rendered moot. Withdrawal of the rejection is respectfully requested.

Rejections under 35 USC §112, second paragraph

Claims 2, 4-7, 14, 16, 23, and 24 have been rejected under 35 USC §112, second paragraph as being indefinite. Claim 2 has been rejected for reciting an enzymatic activity associated directly with a nucleotide sequence. The recitation of this enzymatic activity as being associated with the nucleotide sequence has been omitted. Accordingly, it is believed that the 35 USC §112, second paragraph rejection with respect to claims 2, 4-7, 14, and 16 has been obviated. Withdrawal of the rejection is respectfully requested.

Claims 23 and 24 have been rejected under 35 USC §112, second paragraph as being indefinite for reciting enzymatic activity with the reverse complements of sequences enumerated in those claims. The reference to enzymatic activity has been omitted. Accordingly, it is believed that this rejection is rendered moot. Withdrawal of the rejection is respectfully requested.

Rejections under 35 USC §103

Claims 3, 4, 15, 16, and 20-24 have been rejected under 35 USC §103(a) as being unpatentable over Ara '367 (EP 0 670 367 A1) in view of Tsukamoto et al. (Biochem. Biophys. Res. Comm., 151(1), pp. 25-31, (1988)) or Yuuki et al. (J. Biochem., 98(5), pp. 1147-1156, (1985)). This rejection is traversed for the following reasons.

The present invention discloses a DNA sequence for Alkaline Liquefying α-amylase having α-amylase activity. None of the references disclose this sequence. Thus, they fail to have the elements present in the instant invention. Accordingly, the references cannot render obvious the instant invention because they do not teach the elements of the instant invention. Withdrawal of the rejection is respectfully requested.

Interview

The Applicants would like to thank the Examiner for taking the time to conduct an interview on the instant invention on March 14, 2001.

Conclusion

With the above amendments and remarks, the Applicants believe that the present case defines patentable subject matter such that the case should pass on to allowance. A notice to that effect is earnestly solicited.

Pursuant to the provisions of 37 C.F.R. §§ 1.17 and 1.136(a), the Applicants hereby petition for an extension of 3 (three) months to June 4, 2001 in which to file a reply to the Office Action. The

required fee of $890.00 is being filed concurrently with the Notice of Appeal.

If any questions remain regarding the above matters, please contact Applicant's representative, John W. Bailey, in the Washington metropolitan area at the phone number listed below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By _____
John W. Bailey, #32,881

JWB/TBS/end

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

VERSION WITH MARKINGS TO SHOW CHANGES MADE

2. (Four times Amended) A DNA molecule, [have α-amylase activity] which encodes the amino acid sequence described in Sequence No. 2 or a fragment thereof having α-amylase activity.

3. (Twice Amended) A DNA molecule encoding a protein exhibiting alkaline liquefying α-amylase activity at a pH optimum of 8-9 and possessing an amino acid sequence which has been obtained by modifying an amino acid sequence described in SEQ ID NO: 2 [Sequence No. 2] in a manner in which one or more amino acids are substituted, deleted, or inserted without changing enzymological properties of said amino acid sequence described in SEQ ID NO:2 [such that the sequence of the substituted, added, deleted, or inserted amino acid is equivalent in activity to the amino acid sequence of Sequence No. 2] and hydrolyzes 1,4-α-glucosidic linkages in starches, amylose, amylopectin, and degradation products thereof and in amylose forms: glucose (G1), maltose (G2), maltotriose (G3), maltotetr[a]ose (G4), maltopent[a]ose (G5) and maltohex[a]ose (G6) and does not hydrolyze pullulan.

20. (Amended) The DNA molecule of claim 3, wherein said encoded protein has an isolectric point higher than [of] 8.5 when measured by isoelectric focusing electrophoresis.

22. (Amended) A DNA molecule [encoding a protein exhibiting alkaline liquefying α-amylase activity at a pH optimum of 8-9,] comprising at least one nucleotide sequence selected from the group consisting of SEQ ID NO: 10, SEQ ID NO: 7, SEQ ID NO: 3, SEQ ID NO: 6 and SEQ ID NO: 9.

23. (Amended) A DNA molecule [encoding a protein exhibiting alkaline liquefying α-amylase activity at a pH optimum of 8-9] comprising at least one nucleotide sequence that is the reverse complement of a sequence selected from the group consisting of SEQ ID NO: 8, SEQ ID NO: 3, SEQ ID NO: 4 and SEQ ID NO: 11.

24. (Amended) A DNA molecule [encoding a protein exhibiting alkaline liquefying α-amylase activity at a pH optimum of 8-9] comprising at least one nucleotide sequence selected from the group consisting of SEQ ID NO: 10, SEQ ID NO: 7, SEQ ID NO: 3, SEQ ID NO: 6 and SEQ ID NO: 9, and also comprising at least one nucleotide sequence that is the reverse complement of a sequence selected from

the group consisting of SEQ ID NO: 8, SEQ ID NO: 3, SEQ ID NO: 4 and SEQ ID NO: 11.